



Fall Semester 2005

# Graduate Institute

## Member Universities

### Degree Programs

#### Louisiana State University

Engineering Sciences  
Environmental Studies  
Experimental Statistics

#### Mississippi State University

Civil Engineering  
Environmental  
Geotechnical  
Hydraulics  
Structural  
Computational Engineering  
Engineering Management  
Electrical Engineering  
Industrial Engineering  
Computer Science and  
Engineering  
Mathematics and Statistics  
Business Administration  
Project Management

#### Texas A&M University

Ocean Engineering  
Oceanography

### Inquiries and Questions

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and Development Center  
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Vicksburg, MS 39180-6199  
(601) 634-3549 or 634-4279  
<http://graduate-institute.erdc.usace.army.mil>  
E-mail: [graduate-institute@erdc.usace.army.mil](mailto:graduate-institute@erdc.usace.army.mil)

## The Graduate Institute

The Graduate Institute is an association of universities and the U.S. Army Engineer Research and Development Center (ERDC) through which academic credit and graduate degrees can be earned from Member Universities that offer programs at ERDC. The Institute was established in 1986 and functions through joint agreement between ERDC and Member Universities (Louisiana State University, Mississippi State University, and Texas A&M University). Academic oversight is given by the Graduate Institute Administrative Board, a group composed of a representative from ERDC and each Member University.

## The Graduate Program

Under the program, you may enroll as either a nondegree student or in a graduate degree program at a Member University.

If you plan a degree, it will be necessary to apply for admission from the Member University offering the program desired. Completed admission forms should be submitted to the University through the U.S. Army Engineer Research and Development Center, ATTN: Director, Graduate Institute, 3909 Halls Ferry Road, Vicksburg MS 39180-6199. Application forms can be obtained from the Director's office or from the Admissions Office at the University. Please note that if you have been accepted in selected out-of-state programs, you may be eligible to enroll on an in-state tuition basis through the Academic Common Market.

Upon admission as a degree candidate into a graduate program, it will be necessary to form a graduate committee to advise and work with you in the selection of a thesis topic and the selection of courses. The graduate committee will consist of members from the university graduate faculty and a member from ERDC who has adjunct, visiting, or affiliate faculty status. The committee will be chaired by a member of the graduate faculty appointed by the head of the major department. The Institute Director will assist you in contacting and making arrangements to form your graduate committee.

In addition to providing courses to meet degree requirements, the Institute also offers graduate credits in other scientific disciplines.

*The Graduate Institute does not discriminate against anyone because of age, creed, color, national origin, race, religion, sex, or handicap.*

# Courses: Fall Semester 2005

## Mississippi State University

### Civil Engineering

#### **CE 6183. Special Topics in CE: Waterbourne Transport.** (3).

Instr. Dr. W. McAnally, MSU.

Planning and design of Marine Transportation System facilities. Components and stakeholders of the MTX. Navigation vessels and their characteristics. Planning, design, and operation of navigation ports, channels, and locks.

Tu & Th, 11:00-12:15 p.m., Classroom No. 3, Bldg. 3072. (VTC).

#### **CE 6523. Open Channel Hydraulics.** (3). Instr. Dr. J. Martin, MSU.

Energy and Momentum Principles in open channel flow; flow resistance; uniform and non-uniform flow; channel controls and transitions; unsteady flow routing.

M, W, & F, 9:00-9:50 a.m., Classroom No. 2, Bldg. 3072. (VTC).

#### **CE 8683. Nonlinear and Dynamic Finite Element Analysis.** (3).

Instr. Dr. C. Eamon, MSU.

Introduction to the theory of nonlinear and dynamic FEA. Derivation of large strain, large displacement tangent stiffness matrix. Inclusion of material nonlinearities. Nonlinear solution algorithms. Development of equations of motion and mass, damping matrices. Solution methods for free and forced vibration, modal analysis, and transient problems.

Prereq: EM 4123/6123, CE 4663, or consent of instructor.

Day(s), Time, Place TBA.

#### **CE 8803. Unit Operations I.** (3). Instr. Dr. B. Magbanua, MSU.

Theory and application of physical and chemical unit processes and operations available for the treatment of water and wastewater.

Tu & Th, 8:00-9:15 a.m., Classroom No. 3, Bldg. 3072. (VTC).

#### **CE 8990. Blast Resistant Structures.** (3).

Instr. Dr. S. Woodson, ERDC.

Concepts and techniques for the design and analysis of structural elements and buildings subjected to blast effects. Consideration given to both hardened structures and public building. Prereq.: Consent of Instructor.

W, 3:30-6:30 p.m., Classroom No. 1, Bldg. 3072.

#### **CE 8990. Special Topics in CE: Hydromechanics.** (3).

Instr. Dr. R. Stockstill, ERDC.

Hydraulic equations of motion and their analytic solutions. Similitude and modeling. Unsteady, non-uniform flow in closed conduits and open channels.

Tu & Th, 3:30-5:00 p.m., Classroom No. 3, Bldg. 3072. (VTC).

#### **CE 8990. Special Topics in CE: Fine Sediment.** (3).

Instr. Dr. W. McAnally, MSU.

Fine sediment processes. Clay mineralogy. Physical and chemical processes controlling fine-grained sediment transport, erosion, and deposition. Numerical modeling of fine-sediment transport.

Environmental effects of sediment.

Tu & Th, 12:30-1:45 p.m., Classroom No. 3, Bldg. 3072. (VTC).

#### **CE 8990. Special Topics in CE: Unbound and Stabilized Pavement Layers and Foundations.** (3). Instr. Dr. D. Smith, ERDC.

The objective of this course is to develop an understanding of the principles of the design, performance, and response of pavement foundations and to describe the various processes for the design, construction, compaction, and drainage of pavements. Topics covered include: earthen materials-fills and subgrades; aggregates-types, properties, and performance; shrinkage and swell characteristics; moisture suction theories; strength testing such as unconfined compression, triaxial testing, theory of strength, and modeling of pavement foundations; and materials.

M & W, 3:30-5:00 p.m., Classroom No. 2, Bldg. 3072. (VTC).

### Electrical and Computer Engineering

#### **ECE 6990. Special Topics in ECE: Antenna (Electromagnetics II).**

(3). Instr. Dr. E. Topsakal, MSU.

Tu & Th, 11:00-12:15, Classroom No. 1, Bldg. 3072. (VTC).

### **ECE 8453. Introduction to Wavelets–Signals/Systems.** (3).

Instr. Dr. J. Fowler, MSU.

Wavelet-expansion systems, discrete wavelet transform, multiresolution analysis, time-frequency analysis, filter banks and the discrete wavelet transform, wavelet transform, wavelet design, wavelet-based applications. Prereq: CE 3163 or consent of instructor. M, W, & F, 1:00-1:50 p.m., Classroom No. 1, Bldg. 3072. (VTC).

### Industrial Engineering

#### **IE 6533. Project Management.** (3). Instr. Dr. A. Greenwood, MSU.

Use of CPM, PERT, and GERT for planning, managing and controlling computer procedures for complex networks.

Tu & Th, 11:00 - 12:15 p.m., Classroom No. 2, Bldg. 3072. (VTC).

#### **IE 6753. System Engineering and Analysis.** (3).

Instr. Dr. S. Bullington, MSU.

Systems concepts, methodologies, models, and tools for analyzing, designing, and improving new existing human-made systems.

Tu & Th, 9:30-10:45 a.m., Classroom No. 3, Bldg. 3072. (VTC).

#### **IE 8990. Special Topics in IE: Human Systems Engineering.** (3).

Instr. Dr. V. Duffy, MSU.

Tu & Th, 3:30-4:45 p.m., Classroom No. 2, Bldg. 3072. (VTC).

### Computer Science and Engineering

#### **CSE 6273. Introduction to Computer Forensics.** (3).

Instr. Dr. D. Dampier, MSU.

Introduction to computer crime and the study of evidence for solving computer-based crimes. Topics: computer crime, computer forensics and methods for handling evidence.

M & W, 2:00-3:15 p.m., Classroom No. 3, Bldg. 3072. (VTC).

### Business

#### **EC 6313. Introduction to Regional Economics.** (3).

Instr. Dr. C. Campbell, MSU.

Regional economic differences; location theory (industrial, agricultural, and residential); land use patterns; regional structure, growth, and methods of analysis; national assistance for regional economic development.

Tu, 6:00-8:30 p.m., Classroom No. 2, Bldg. 3072. (VTC).

**Tuition: \$1,156.50.**

#### **FIN 8313. Financial Management of Projects.** (3).

Instr. Dr. G. Kelly, MSU.

Focus on the financial aspects of project management. Topics include capital risk assessment, cash flow forecasting, value estimation and identification and valuation of options embedded in the project.

**MSU Internet. Tuition: \$1,156.50.**

#### **EC 8043. Survey of Economics.** (3). Instr. Dr. R. Campbell, MSU.

Introduction to Macro and microeconomics, national income accounts, monetary system, macroeconomic policy, international trade, supply and demand, distribution of income, markets, pricing and output.

**MSU Internet. Tuition: \$719.25.**

#### **FIN 8052. Survey of Finance.** (2). Instr. Dr. R. Gilmer, MSU.

Survey of financial management, analysis, planning controls, sources/uses of funds, capital budgeting and working capital with word processing, spreadsheet and database applications.

**MSU Internet. Tuition: \$479.50.**

#### **MKT 8072. Survey of Marketing.** (2). Instr. Dr. Kinard, MSU.

Survey of product, price, promotion, and distribution decisions in for-profit and non-profit settings; external environmental factors affecting marketing decisions; focus on strategic decision making.

**MSU Internet. Tuition: \$479.50**

### Term 1 (18 Aug – 6 Oct 05)

#### **ACC 8112. Financial Statement and Management Accounting**

**Report Analysis for Decision Making.** (2). Instr. Dr. N. Addy, MSU. Analysis of financial statements and internal accounting reports to help management make decisions. Prereq.: ACC 8303.

**MSU Internet. Tuition: \$771.00.**

**BA 8112. Business Case Analysis Using Statistics.** (2).

Instr. Mr. T. Srisupandit, MSU.

Descriptive statistics, data collection techniques estimation, hypothesis testing, analysis of variance, regression, time series, index numbers, forecasting, statistical process control applied to business case data.  
MSU Internet. Tuition: \$771.00.

**MKT 8112. Marketing Management.** (2). Instr. Staff, MSU.

A graduate survey of marketing focused on the strategic analysis and planning to effectively match marketing strategies with changing macro, micro, and organizational environments.

TBA, Classroom No. 3, Bldg. 3072. (VTC). Tuition: \$771.00.

**Term 2 (11 Oct – 9 Dec 05)****BIS 8112. Managing Information Technology and Systems.** (2).

Instr. Dr. J. Shim, MSU.

Course includes the description, acquisition or development and use of systems from a local and global perspective. Technology-enabled concepts are used for student assignments. Prereq.: BIS 8022.

MSU Internet. Tuition: \$771.00.

**BIS 8122. Multimedia Presentation and Communication.** (2).

Instr. Dr. C. Lehman, MSU.

Emphasis on planning and delivering business presentations enhanced by multimedia. Concepts, design, and experience in developing multimedia presentations. Exposure to interactive multimedia.

M, 6:00-10:00 p.m., Classroom No. 2, Bldg. 3072. (VTC).

Tuition: \$771.00.

**MGT 8112. Leadership Skills for Managerial Behavior.** (2).

Instr. Dr. D. Cochran, MSU.

Survey of major behavioral skills used by managers to help them understand and influence behavior in an organizational setting.

Prereq.: MGT 8063 or equivalent.

MSU Internet. Tuition: \$771.00.

**MGT 8122. Business Consulting Project.** (2).

Instr. Dr. B. Spencer, MSU.

A group-based consulting project on strategic issues currently facing a participating organization. Prereq.: MGT 8121 or equivalent.

MSU Internet. Tuition: \$771.00.

# Louisiana State University

## Environmental Studies

**ENVS 7041. Environmental Policy Analysis.** (3).

Instr. Dr. M. Reams, LSU.

Management-oriented approach to major phases of environmental policy; formulation, implementation, evaluation; theoretical bases and analytical techniques.

Tu &amp; Th, 10:30 a.m. - 12:00 noon, Classroom No. 4, Bldg. 3072. (VTC).

**ENVS 7043. Environmental Law and Regulations.** (3).

Instr. Dr. M. Wascom, LSU.

Introduction to basic principles of federal and state laws, regulations, and court decisions involving pollution of the environment, including the National Environmental Policy Act, Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, Oil Pollution Act; current topical legal developments.

Tu, 5:00-8:00 p.m., Classroom No. 4, Bldg. 3072. (VTC).

## Experimental Statistics

**EXST 7087. Advanced Topics in Statistics: Statistical Methods I.**

(3). Instr. Dr. J. Geaghan, LSU.

Lectures on advanced topics in statistics not covered in other experimental statistics courses.

LSU Internet.

# Texas A&M University

## Ocean Engineering

**OCEN 685. Problems.** (1-6). Research for thesis or dissertation.**OCEN 691. Research.** (1-6). Research for thesis or dissertation.**Calendar: Summer Semester 2005**

18 Aug 05	Semester begins for MSU.
22 Aug 05	Semester begins for LSU and ULM.
29 Aug 05	Semester begins for TAMU.
31 Aug 05	Last day to drop a class from MSU and LSU without a grade.
2 Sep 05	Last day to drop a class from TAMU without a grade.
4 Nov 05	Last day to withdraw from LSU and TAMU.
15 Nov 05	Last day to withdraw from MSU.
9 Dec 05	Semester ends for MSU and ULM.
10 Dec 05	Semester ends for LSU.
14 Dec 05	Semester ends for TAMU.

**Registration**

Registration will be held 25 July through 12 August 2005, 8:30 a.m. until 4:00 p.m., Building 3072 at ERDC.

**Tuition and Fees**

MSU – \$719.25/3 SCH (Except as noted for MBA classes)

LSU – \$858.00/3 SCH (Subject to change)

TAMU – \$1,550.00/3 SCH (Subject to change)

ULM – TBA

Tuition and fees are payable at registration by check, money order, or a copy of an **approved** purchase request (DD Form 1556 for Corps employees).

**New Students and Readmit Students**

**New students** enrolling in courses from MSU **MUST** have a copy of their undergraduate transcript mailed to the Graduate Institute prior to registration and **MUST** register by 5 August to ensure admission to the university before the semester begins. Students who have not been enrolled in classes at MSU for one semester (Fall or Spring) or more should also register by 5 August to ensure timely readmission to the university and enrollment in classes. **New students** enrolling in courses offered by LSU and TAMU will have to pay an application fee of \$25 and \$50, respectively.

**Withdrawals and Refunds**

Requests to withdraw from a course must be submitted in writing to the Director, Graduate Institute. Refunds, if applicable, will be by the university according to their policy.

**Textbooks**

Books can be purchased through the colleges' bookstore or any retail source. A list of books and sources will be provided at registration.

# University of Louisiana at Monroe

## Computer Science

**CSCI 180-011. Foundations of Computer Science.** (3). Instr. TBA.

An introduction to the foundations of computer science and problem solving using a modern, high-level programming language.

(Jprogramming language: VB.NET.).

Tu &amp; Th, 9:30-10:45 a.m., Classroom No. 3, Bldg. 3072. (VTC).

**CSCI 200-01 and CSCI 200-02. Introduction.** (3). Instr. TBA.

An introduction to algorithms and programming with an emphasis on the basic design, implementation, and testing of solutions to numerical and nonnumerical problems. (Programming language: Java.)

CSCI 200-01: M &amp; W, 11:00-12:50 p.m., Classroom No. 4, Bldg. 3072. (VTC).

CSCI 200-02: M &amp; W, 2:00-3:50 p.m., Classroom No. 4, Bldg. 3072. (VTC).

**CSCI 273-01. Introduction to File Organization.** (3). Instr. TBA.

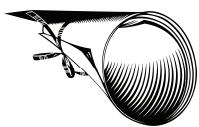
Dynamic memory management. Secondary storage concerns. File processing environment, sequential and random access. File organization: sequential, random, index, and multikey. Hashing and indexing techniques. Prereq.: CSCI 203 and 226.

Tu &amp; Th, 11:00-12:15 p.m., Classroom No. 4, Bldg. 3072. (VTC).

**CSCI 313-01. Computer Theory.** (3). Instr. TBA.

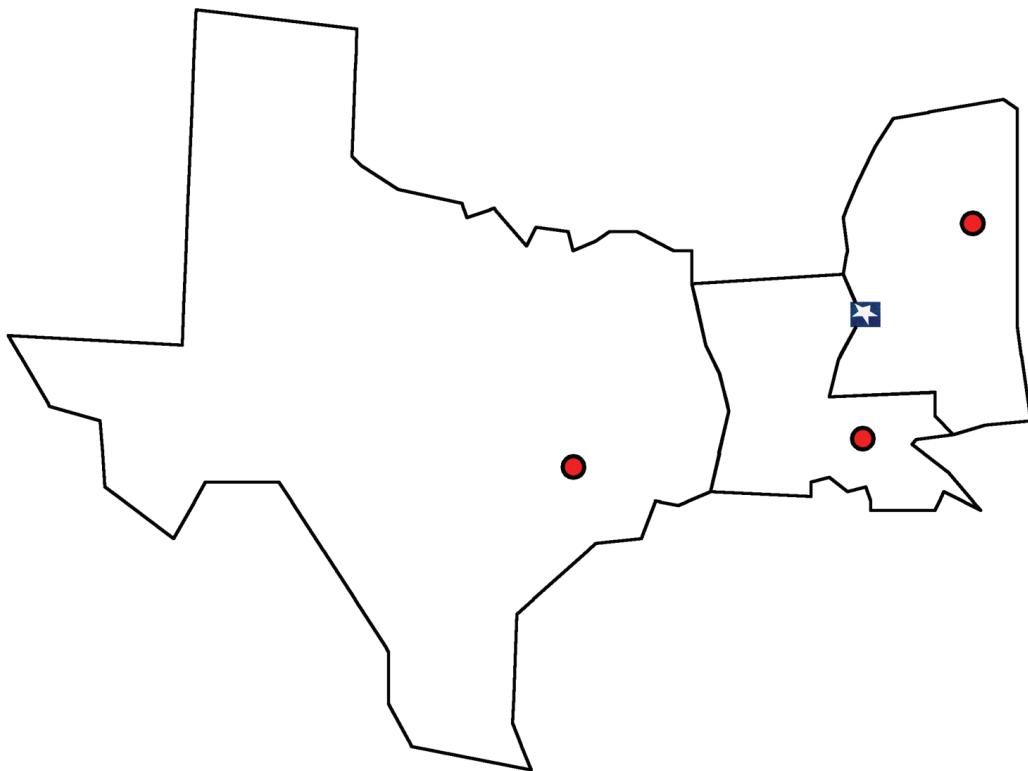
The various types of abstract languages and their corresponding acceptors. The Chomsky hierarchy. Determinism and nondeterminism in language acceptors; problem decidability. The relationship of abstract languages and automata to computers. Prereq.: CSCI 305 and 310.

Tu &amp; Th, 0800-9:15 a.m., Classroom No. 4, Bldg. 3072.



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OFFICIAL BUSINESS

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